


# DEPLOYMENT MADE EASY!



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# DSFederal Inc.

- >> We provide solutions to Federal Agencies
- >> Our technology solutions connect customers to the people they serve



# Necessity is the Mother of Invention

- >> Project Requirements
  - Budget
  - Team Size
  - Time
- >> Need for Standardized Deployments
- >> Workflow with CI/CD
- >> Onboarding Developers
  - Classic local development
  - Virtual Machine

# Classic Dev Environment

## Problems?

- >> Host OS Support; tedious configurations
- >> Non-transferable
- >> Deployment Hassle

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# Virtual Machines

## >> Pros

- Pristine host; highly customizable
- Multiple VMs, 1 per project
- Clone, share and transfer to other hosts

## >> Cons

- Resource heavy
- Difficult to share images



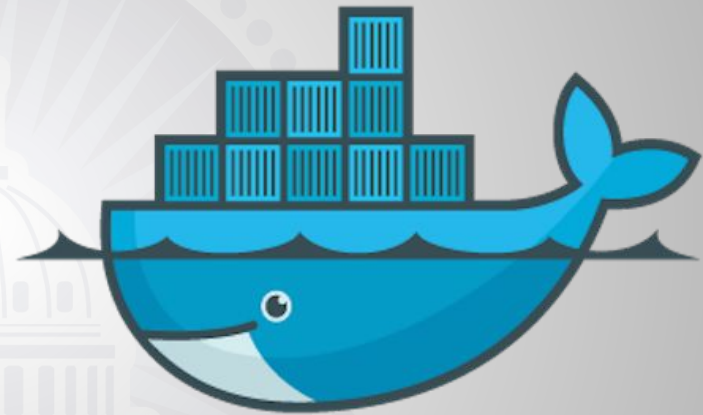
# Docker to the Rescue



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# Docker

**Docker** is an open platform for developers and sysadmins to build, ship, and run distributed applications, whether on laptops, data center VMs, or the cloud.



docker

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# Why Docker?

- >> Lightweight
- >> Portable
- >> Consistent Environment



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# Docker Containers

- >> Docker container wrap up a piece of software in a complete filesystem that contains everything it needs to run: code, runtime, system tools, system libraries – anything you can install on a server
- >> A container is a runtime instance of an image



# Docker Images

- >> Docker container runs an Image
- >> Binary package with root filesystem and metadata
- >> Metadata includes:
  - Application Process
  - Volumes
  - Ports, etc.



# Compose Docker Image

- >> Images are built from DockerFile
- >> DockerFile is sequential list of commands
- >> Images can inherit from other images

*Example: php:5.6-fpm inherits from debian:jessie*

# DockerFile example

```
#Docker file 1 (Installing apache on an  
Ubuntu 12 image )  
FROM ubuntu:12.04
```

```
RUN apt-get update && apt-get install -y  
apache2 && apt-get clean && rm -rf  
/var/lib/apt/lists/*
```

```
ENV APACHE_RUN_USER www-data  
ENV APACHE_RUN_GROUP www-data  
ENV APACHE_LOG_DIR /var/log/apache2
```

```
EXPOSE 80  
CMD ["/usr/sbin/apache2", "-D",  
"FOREGROUND"]
```

```
#Docker File 2 (Here we don't care about the OS)  
FROM php:7.2-apache
```

```
WORKDIR /var/www/html  
EXPOSE 80
```

# Lets Setup Local

- >> Dockerfile for Applications
- >> Compose File
- >> Environment Variables
- >> Volumes
- >> Git Branches



# Amazon Web Services

- >> Provides secured hosting service
- >> Scalable
- >> Complies with Fed. Govt. and is FEDRAMP Certified
- >> Pay as you go
- >> Great set of tools



**amazon**  
web services

# Setup AWS EC2 Instance

- >> Create AWS Account
- >> Configure EC2 Instance
- >> Setup SSH Access
- >> Install Docker & Docker Compose



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# Setup Nginx

- >> Organize domains
- >> Redirect incoming requests

for eg.,

govcondev.dsrfederal.com  127.0.0.1:10080

govconstg.dsrfederal.com  127.0.0.1:10081

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# CI Jenkins

- >> Automation Server
- >> Makes deployment easier
- >> Works great with EC2, github, etc.
- >> For our purposes we will use plugins:
  - Github Plugin
  - Publish Over SSH

# SSH Server

SSH Server

Name  ?

Hostname  ?

Username  ?

Remote Directory  ?

Use password authentication, or use a different key ?

Passphrase / Password  ?

Path to key  ?

Key  ?

# Github Personal Token

The screenshot shows the GitHub Developer settings page for Personal access tokens. On the left, there is a sidebar with three menu items: 'OAuth Apps', 'GitHub Apps', and 'Personal access tokens', which is currently selected. The main content area is titled 'Personal access tokens' and includes two buttons: 'Generate new token' and 'Revoke all'. Below this, a text block explains that these tokens can be used to access the GitHub API. A table lists one token: 'Jenkins GitHub Plugin token (http://192.168.30.3:8080/)' with a 'Delete' button and a note that it was last used within the last 2 months. The token's permissions are listed as 'admin:repo\_hook, repo, repo:status'. A paragraph at the bottom explains that these tokens function like ordinary OAuth access tokens and can be used for Git over HTTPS or to authenticate to the API over Basic Authentication. The footer contains copyright information for GitHub, Inc. (© 2018), links for Terms, Privacy, Security, Status, and Help, the GitHub logo, and links for Contact GitHub, Pricing, API, Training, Blog, and About.

Settings / Developer settings

OAuth Apps

GitHub Apps

Personal access tokens


## Personal access tokens

Generate new token Revoke all

Tokens you have generated that can be used to access the [GitHub API](#).

<b>Jenkins GitHub Plugin token (http://192.168.30.3:8080/)</b> —	Last used within the last 2 months	Delete
<i>admin:repo_hook, repo, repo:status</i>		

Personal access tokens function like ordinary OAuth access tokens. They can be used instead of a password for Git over HTTPS, or can be used to [authenticate to the API over Basic Authentication](#).

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# Token Access

- OAuth Apps
- GitHub Apps
- Personal access tokens**

## Edit personal access token

If you've lost or forgotten this token, you can regenerate it, but be aware that any scripts or applications using this token will need to be updated.

[Regenerate token](#)

### Token description

Jenkins GitHub Plugin token (http://192.168.30.3:8080/)

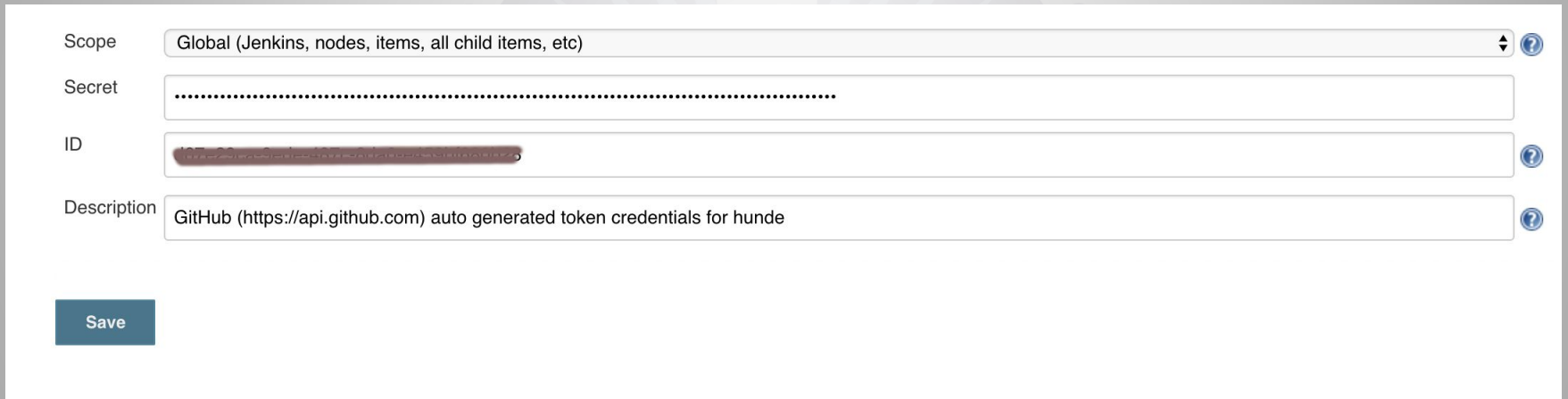
What's this token for?

### Select scopes

Scopes define the access for personal tokens. [Read more about OAuth scopes.](#)

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> <b>repo</b>            | Full control of private repositories   |
| <input checked="" type="checkbox"/> repo:status            | Access commit status                   |
| <input checked="" type="checkbox"/> repo_deployment        | Access deployment status               |
| <input checked="" type="checkbox"/> public_repo            | Access public repositories             |
| <input checked="" type="checkbox"/> repo:invite            | Access repository invitations          |
| <input type="checkbox"/> <b>admin:org</b>                  | Full control of orgs and teams         |
| <input type="checkbox"/> write:org                         | Read and write org and team membership |
| <input type="checkbox"/> read:org                          | Read org and team membership           |
| <input type="checkbox"/> <b>admin:public_key</b>           | Full control of user public keys       |
| <input type="checkbox"/> write:public_key                  | Write user public keys                 |
| <input type="checkbox"/> read:public_key                   | Read user public keys                  |
| <input checked="" type="checkbox"/> <b>admin:repo_hook</b> | Full control of repository hooks       |

# Github Credentials in Jenkins



The screenshot shows the Jenkins Credentials configuration page for a GitHub token. The form includes the following fields:

- Scope:** A dropdown menu set to "Global (Jenkins, nodes, items, all child items, etc)".
- Secret:** A text input field containing a series of dots, representing a masked token.
- ID:** A text input field containing a long alphanumeric string, representing the token ID.
- Description:** A text input field containing the text "GitHub (https://api.github.com) auto generated token credentials for hunde".

A "Save" button is located at the bottom left of the form.

# Github Connection

**GitHub**

GitHub Servers

**GitHub Server** ?

Name  ?

API URL  ?

Credentials  ? Add

Manage hooks  ?

Test connection ?

Advanced...

Delete

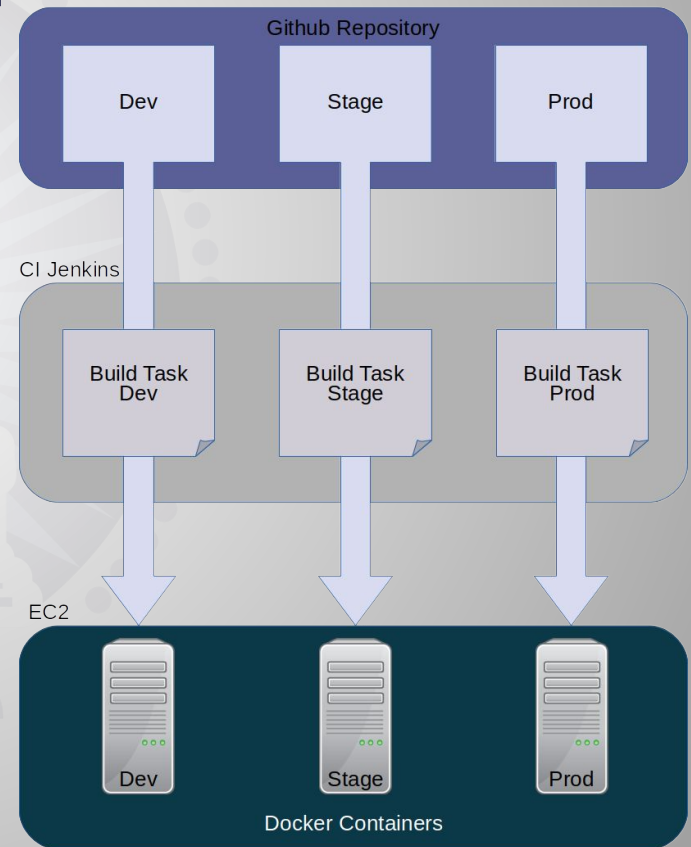
Add GitHub Server

Save Apply

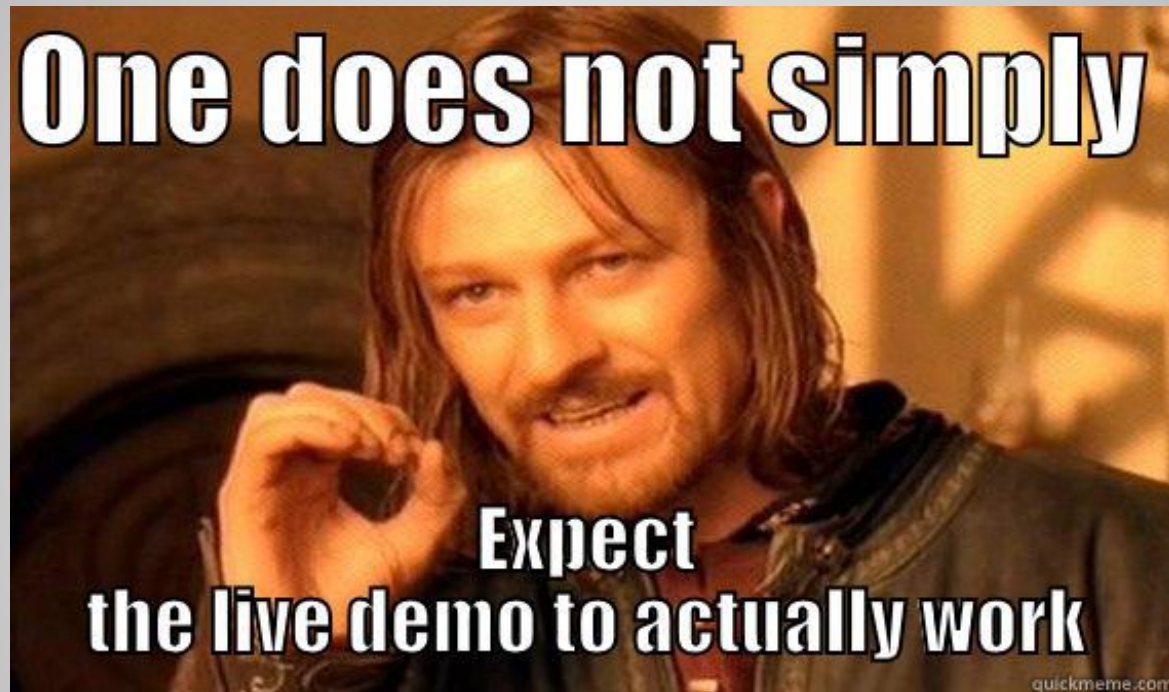
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# Jenkins Build Tasks

- >> Build tasks for each path
- >> Git Polling triggers individual tasks
- >> Task Definition:
  - DrupalGovConDev
  - DrupalGovConStage
  - DrupalGovConProd



# Demo



<https://youtu.be/qZalwRMcQk0>

<https://youtu.be/GHTRZyfXc2M>

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# QUESTIONS?

<https://github.com/DSFederalInc/Drupal4GovCon>

**Demo:**

<https://youtu.be/qZalwRMcQk0>

<https://youtu.be/GHTRZyfXc2M>

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**THANK YOU**

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